Appendix K

Definition of Level of Service for Signalized and Unsignalized Intersections

Level of service used for unsignalized intersections are different from the criteria used for signalized intersections. LOS for signalized intersections are based on average stopped delay time per vehicle. LOS for unsignalized intersections are based on critical gap, the minimum time interval between vehicles in a major traffic stream that permits side-street vehicle at a STOP-controlled approach to enter the intersection under, and estimated reserve capacity.

Level of Service Description for Signalized Intersections

Level of Service	Average Control Delay (second)	Description
A	< 10	This level of service occurs when progression is extremely favorable, and most vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.
B	> 10 - 20	This level generally occurs with good progression, short cycle lengths, or both. More vehicles stop than for LOS A, causing higher levels of average delay.
C	> 20 - 35	These higher delays may result from fair progression, longer cycle lengths, or both. Individual cycle failures may begin to appear in this level. The number of vehicles stopping is significant at this level, though many still pass through the intersection without stopping.
D	> 35 - 55	At level D, the influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, longer cycle lengths, or high volume to capacity (v/c) ratios, Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.
E	> 55 - 80	These high delay values generally indicate poor progression, long cycle lengths, and high v/c ratios. Individual cycle failures are frequent occurrences.
F	> 80	This level, considered to be unacceptable to most drivers, often occurs with over saturation, that is, when arrival flow rates exceed the capacity of the intersection. It may also occur at high v/c ratios below 1.0 with many individual cycle failures. Poor progression and cycle lengths may also be major contributing causes to such delay levels.

Level of Service for Unsignalized Intersections

Level of Service	Average Control Delay (second)	Description
A	< 10	Few or no delays
B	> 10 – 15	Short traffic delays
C	> 15 – 25	Average traffic delays
D	> 25 – 35	Long traffic delays
E	> 35 – 50	Very long traffic delays
F	> 50	Extreme traffic delays with intersection capacity exceeded

Urban Street Level of Service By Class

Urban street level of service (LOS) is based on average through-vehicle travel speed for the segment or for the entire street under consideration. The average speed is computed from the running times on the urban street and the control delay of through movements at signalized intersections. Urban Street LOS is also determined based urban street class (I through IV). The urban street class can be base don direct field measurement of the free-flow speeds or estimated free-flow speeds based on street's functional and design categories. Wisconsin Avenue corridor is classified as either class III or IV.

Urban Street LOS	Urban Street LOS by Class (mi/h)			
	I	II	III	IV
A	> 44.7	> 36.7	> 31.1	> 25.5
B	> 34.8 – 44.7	> 28.6 – 36.7	> 24.2 – 31.1	> 19.9 – 25.5
C	> 24.9 – 34.8	> 20.5 – 28.6	> 17.4 – 24.2	> 14.3 – 19.9
D	> 19.9 – 24.9	> 16.2 -20.5	> 13.7 – 17.4	> 11.2 – 14.3
E	> 19.9 – 16.1	> 13.0 – 16.2	> 10.6 – 13.7	> 8.7 – 11.2
F	≤ 16.1	≤ 13.0	≤ 10.6	≤ 8.7